AMENDMENTS TO THE CLAIMS

1.   (Currently amended) A system for discovering and identifying a server, the system comprising:

a network comprising at least one domain, ~~wherein~~ the at least one domain ~~comprises at least one server~~ comprising a plurality of servers; and

a communication device comprising:

      a server monitoring unit operable for:

            dynamically discovering ~~at least one~~ a server on the network;

            monitoring ~~at least one~~ the server on the network; [[and]]

            determining information associated with the monitored server, wherein the information is used to connect to the monitored server after a network failure situation;

            determining if additional information associated with the monitored server is required, the additional information including data necessary to robustly connect to the monitored server or to identify the monitored server's type;

            requesting the additional information from the monitored server; and

            determining the monitored server's role based on the additional information received from the monitored server; and

      a potential server storage unit operable for[[:]] storing the information associated with the monitored server.

2.   (Currently amended) The system of claim 1, wherein the communication device further comprises:

a role inquiry storage unit adapted to store role inquiry data used to determine the role of the monitored server, wherein the role inquiry data comprises information inquiries pertaining to identification of a plurality of server types.

3. (Currently amended) The system of claim 2, wherein the potential server storage unit is further operable for receiving and storing potential server data used to identify potential servers, wherein the potential server data is received from a networking directory or from the potential server's response to the role inquiry data.

4. (Original) The system of claim 3, wherein the server monitoring unit is further operable for:

communicating with the network, the role inquiry storage unit, and the potential server storage unit,

wherein the server monitoring unit is operable for receiving the potential server data from the potential server storage unit;

determining whether the potential server data requires additional information from a potential server,

wherein the additional information comprises information to robustly connect to the potential server or to identify the server type of the potential server;

receiving role inquiry data from the role inquiry storage unit;

providing role inquiry data to the potential server;

receiving additional information from the potential server;

determining the potential server's role from the additional information; and

providing the additional information from the potential server to the potential server storage unit.

5.   (Original) The system of claim 4, the server monitoring unit further adapted to receive networking data from the networking directory and provide the networking data to the potential server storage unit as potential server data, wherein networking data comprises information necessary to robustly connect to the potential server or information necessary to identify the potential server's role.

6.   (Original) The system of claim 1, the system further comprising:

a network operating system unit adapted to communicate with the network and the server monitoring unit,

wherein the network operating system unit is adapted for:

receiving the potential server data and the role inquiry data from the server monitoring unit;

providing the potential server data and the role inquiry data to the potential server;

receiving the additional information from the potential server; and

providing the additional information to the server monitoring unit.

7.   (Currently amended) A method for discovering a server in a network, the method comprising:

dynamically discovering ~~at least one~~ a server on a network;

receiving a name of the ~~at least one~~ server on the network;

filling in contact information associated with the ~~at least one~~ server;

storing the contact information necessary for connecting to the ~~at least one~~ server;

determining whether the network is functioning properly; and

connecting to the ~~at least one~~ server, if the network is not functioning properly.

8. (Currently amended) The method of claim 7, wherein determining whether the network is functioning properly comprises:

determining whether a domain name service (DNS) server is available by attempting to resolve a fully qualified domain name (FQDN) associated with the ~~at least one~~ server; and

determining whether network basic input/output system (NetBIOS) traffic exists by attempting to resolve a NetBIOS name associated with the ~~at least one~~ server,

wherein the network is functioning properly if the FQDN and the NetBIOS name resolve.

9. (Currently amended) The method of claim 7, wherein dynamically discovering ~~at least one~~ a server comprises:

generating a first list of enumerated domains through domain trust discovery;

generating a second list of enumerated domains through directory partitions discovery;

determining whether at least one domain was found in the first list of enumerated domains or the second list of enumerated domains; and

generating a third list of enumerated domains through networking discovery, if no domain was found in the first list of enumerated domains or the second list of enumerated domains.

10. (Currently amended) The method of claim 9, wherein dynamically discovering ~~at least one~~ a server further comprises:

generating a first list of enumerated servers through directory object discovery for each enumerated domain;

determining whether an error occurred during the directory object discovery;

performing a first sequence if an error did not occur during the directory object discovery, the first sequence comprising:

determining whether a server was found in the first list of servers; and

generating a second list of enumerated servers through networking discovery, if no server was found in the first list of servers; and

performing a second sequence if an error occurred during the directory object discovery, the second sequence comprising:

generating a second list of enumerated servers through networking discovery.

11. (Currently amended) The method of claim 7, wherein filling in contact information associated with the at-least-one server further comprises:

receiving a server name from a user;

receiving a first domain name from the user, if the user provides the first domain name;

querying a server associated with the server name for a second domain name, wherein the server belongs to a domain identified by the second domain name;

determining whether the user provided the first domain name;

verifying the first domain name, if it is determined that the first domain name was provided by the user;

determining whether the user provided a server identifier name; and

processing the server identifier name, if the server identifier name was provided by the user.

12. (Original) The method of claim 11, wherein the method further comprises:

determining whether an error occurred when querying the server identified by the server name for a second domain name; and

terminating operation of the method if the determination is made that an error occurred.

13. (Original) The method of claim 11, wherein the server identifier name is selected from a list comprising a NetBIOS name and a FQDN.

14. (Original) The method of claim 13, wherein verifying the first domain name comprises:

determining whether the first domain name is the same as the second domain name;

using the second domain name as a designated domain name if it is determined that the first domain name and the second domain name are not the same;

using the first domain name as a designated domain name if it is determined that the first domain name and the second domain name are the same; and

marking a flag that identifies the designated domain name as not validated.

15. (Original) The method of claim 14, wherein processing the NetBIOS name or FQDN comprises:

using a network directory to search for a server identified by the NetBIOS name or the FQDN within a predetermined domain;

determining whether the server identified by the NetBIOS name or FQDN was found in the predetermined domain;

performing a first sequence if the server identified by the NetBIOS name or FQDN was not found in the predetermined domain, the first sequence comprising:

determining whether the designated domain name is validated; and

validating the designated domain name, if it is determined that the designated domain name was not validated; and

performing a second sequence if the server identified by the NetBIOS name or FQDN was found in the predetermined domain, the second sequence comprising:

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storing the NetBIOS name as contact information, if the server was identified by the NetBIOS name; and

storing the FQDN as contact information, if the server was identified by the FQDN.

16.   (Original) The method of claim 15, wherein validating the designated domain name comprises:

using DNS reverse lookup to find a correct name type;

determining whether DNS reverse lookup found the correct name type;

performing a third sequence if DNS reverse lookup did not find the correct name type, the third sequence comprising:

designating the NetBIOS name as contact information, if the user provided the NetBIOS name; and

designating a first label of the FQDN as contact information, if the user did not provide the NetBIOS name.

17.   (Original) The method of claim 7, wherein storing the contact information necessary for connecting to the at least one server comprises:

determining a valid internet protocol (IP) address for connecting to the server;

sending an administrative network call to the server using the valid IP address;

determining whether an error occurred when sending the administrative network call to the server;

performing a first sequence if an error did not occur when sending the administrative network call to the server, the first sequence comprising:

storing the valid IP address as contact information; and

performing a second sequence if an error did occur when sending the administrative network call to the server, the second sequence comprising:

determining whether a FQDN associated with the server is valid;

storing a NetBIOS name associated with the server, if the FQDN is not valid; and

storing the FQDN associated with the server, if the FQDN is valid.

18.   (Original) The method of claim 17, wherein determining whether a FQDN associated with the server is valid comprises determining whether the FQDN is non-null FQDN.

19.   (Original) The method of claim 17, wherein determining a valid IP address comprises:

determining whether the server has a non-null FQDN;

determining whether the FQDN resolves properly, if the server has a non-null FQDN; and

designating an IP address retrieved from resolving the FQDN as the valid IP address, if the FQDN resolves properly.

20.   (Original) The method of claim 19, wherein determining a valid IP address further comprises:

determining whether the server has a non-null NetBIOS name;

determining whether the NetBIOS name resolves properly, if the server has a non-null NetBIOS name; and

designating an IP address retrieved from resolving the NetBIOS name as the valid IP address, if the NetBIOS name resolves properly.

21.   (Previously presented) The method of claim 20, wherein determining a valid EP address further comprises:

determining if there is a cached IP address associated with the server; and

designating the cached IP address as the valid IP address, if the cached EP address associated with the server exists.

22.   (Currently amended) A method for identifying a server in a network, the method comprising:

designating a remote computer for determining a server role for the remote computer, the server role being defined by a functionality of the server, the server role including a printer server;

selecting a role inquiry from a set of role inquiries, the set of role inquiries comprising requests to determine the server role and requests to monitor the server after the server role has been determined, wherein if the server role has been determined as the printer server, the requests to monitor the server include printer ports information and spool directory information;

querying the remote computer with the role inquiry;

receiving a response to the role inquiry from the remote computer; and

attempting to determine a server role of the remote computer from the response.

23.   (Original) The method of claim 22, wherein the method further comprises:

selecting a second role inquiry from a set of role inquiries, if the server role of the remote computer cannot be determined;

querying the remote computer with the second role inquiry;

receiving a second response to the second role inquiry from the remote computer; and

determining server role of the remote computer from the second response.

24.   (Original) The method of claim 22, wherein the attempt to determine a server role of the remote computer from the response is successful.

25.   (Currently amended) A computer-readable medium having computer-executable instructions for discovering a server in a network, the computer-executable instructions performing steps comprising:

dynamically discovering at least one a server on a network;

receiving a name of the at least one server on the network, the name being selected from a list comprising a NetBIOS name and a FQDN;

filling in contact information associated with the at least one server, the filling in contact information associated with the server including processing the name of the server on the network, the processing comprising:

(a) locating the server in a predetermined domain; and

(b) storing the name of the server as the contact information necessary for connecting to the server;

storing the contact information necessary for connecting to the at least one server;

determining whether the network is functioning properly; and

connecting to the at least one server, if the network is not functioning properly.

26.   (Original) The computer-readable medium of claim 25, wherein determining whether the network is functioning properly comprises:

determining whether a DNS server is available by attempting to resolve a FQDN associated with the at least one server; and

determining whether NetBIOS traffic exists by attempting to resolve a NetBIOS name associated with the at least one server,

wherein the network is functioning properly if the FQDN and the NetBIOS name resolve.

27.   (Currently amended) The computer-readable medium of claim 25, wherein dynamically discovering ~~at least one~~ a server comprises:

generating a first list of enumerated domains through domain trust discovery;

generating a second list of enumerated domains through directory partitions discovery;

determining whether at least one domain was found in the first list of enumerated domains or the second list of enumerated domains; and

generating a third list of enumerated domains through networking discovery, if no domain was found in the first list of enumerated domains or the second list of enumerated domains.

28.   (Currently amended) The computer-readable medium of claim 27, wherein dynamically discovering ~~at least one~~ a server further comprises:

generating a first list of enumerated servers through directory object discovery for each enumerated domain;

determining whether an error occurred during the directory object discovery;

performing a first sequence if an error did not occur during the directory object discovery, the first sequence comprising:

determining whether a server was found in the first list of servers; and

generating a second list of enumerated servers through networking discovery, if no server was found in the first list of servers; and

performing a second sequence if an error occurred during the directory object discovery, the second sequence comprising:

generating a second list of enumerated servers through networking discovery.

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29.   (Currently amended) The computer-readable medium of claim 25, wherein filling in contact information associated with the ~~at least one~~ server comprises:

receiving a server name from a user;

receiving a first domain name from the user, if the user provides the first domain name;

querying a server associated with the server name for a second domain name, wherein the server belongs to a domain identified by the second domain name;

determining whether the user provided the first domain name;

verifying the first domain name, if it is determined that the first domain name was provided by the user;

determining whether the user provided a server identifier name; and

processing the server identifier name, if the server identifier name was provided by the user.

30.   (Original) The computer-readable medium of claim 29, having further computer-executable instructions for performing the steps of:

determining whether an error occurred when querying the server identified by the server name for a second domain name; and

terminating operation of the method if the determination is made that an error occurred.

31.   (Original) The computer-readable medium of claim 29, wherein the server identifier name is selected from a list comprising a NetBIOS name and a FQDN.

32.   (Original) The computer-readable medium of claim 31, wherein verifying the first domain name comprises:

determining whether the first domain name is the same as the second domain name;

using the second domain name as a designated domain name if it is determined that the first domain name and the second domain name are not the same;

using the first domain name as a designated domain name if it is determined that the first domain name and the second domain name are the same; and

marking a flag that identifies the designated domain name as not validated.

33.   (Original) The computer-readable medium of claim 32, wherein processing the NetBIOS name or FQDN comprises:

using a network directory to search for a server identified by the NetBIOS name or the FQDN within a predetermined domain;

determining whether the server identified by the NetBIOS name or FQDN was found in the predetermined domain;

performing a first sequence if the server identified by the NetBIOS name or FQDN was not found in the predetermined domain, the first sequence comprising:

determining whether the designated domain name is validated; and

validating the designated domain name, if it is determined that the designated domain name was not validated; and

performing a second sequence if the server identified by the NetBIOS name or FQDN was found in the predetermined domain, the second sequence comprising:

storing the NetBIOS name as contact information, if the server was identified by the NetBIOS name; and

storing the FQDN as contact information, if the server was identified by the FQDN.

34. (Original) The computer-readable medium of claim 33, wherein validating the designated domain name comprises:

using DNS reverse lookup to find a correct name type;

determining whether DNS reverse lookup found the correct name type;

performing a third sequence if DNS reverse lookup did not find the correct name type, the third sequence comprising:

designating the NetBIOS name as contact information, if the user provided the NetBIOS name; and

designating a first label of the FQDN as contact information, if the user did not provide the NetBIOS name.

35. (Currently amended) The computer-readable medium of claim 25, wherein storing the contact information necessary for connecting to the ~~at least one~~ server comprises:

determining a valid internet protocol (IP) address for connecting to the server;

sending an administrative network call to the server using the valid IP address;

determining whether an error occurred when sending the administrative network call to the server;

performing a first sequence if an error did not occur when sending the administrative network call to the server, the first sequence comprising:

storing the valid IP address as contact information; and

performing a second sequence if an error did occur when sending the administrative network call to the server, the second sequence comprising:

determining whether a FQDN associated with the server is valid;

storing a NetBIOS name associated with the server, if the FQDN is not valid; and

storing the FQDN associated with the server, if the FQDN is valid.

36.   (Original) The computer-readable medium of claim 35, wherein determining whether a FQDN associated with the server is valid comprises determining whether the FQDN is non-null FQDN.

37.   (Original) The computer-readable medium of claim 35, wherein determining a valid IP address comprises:

determining whether the server has a non-null FQDN;

determining whether the FQDN resolves properly, if the server has a non-null FQDN; and

designating an LP address retrieved from resolving the FQDN as the valid IP address, if the FQDN resolves properly.

38.   (Original) The computer-readable medium of claim 37, wherein determining a valid EP address further comprises:

determining whether the server has a non-null NetBIOS name;

determining whether the NetBIOS name resolves properly, if the server has a non-null NetBIOS name; and

designating an IP address retrieved from resolving the NetBIOS name as the valid IP address, if the NetBIOS name resolves properly.

39.   (Previously presented) The computer-readable medium of claim 38, wherein determining a valid IP address further comprises:

determining if there is a cached IP address associated with the server; and

designating the cached IP address as the valid IP address, if the cached IP address associated with the server exists.

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40. (Currently amended) A computer-readable medium having computer-executable instructions for identifying a server in a network, the computer-executable instructions performing steps comprising:

designating a remote computer for determining a server role for the remote computer, the server role being defined by a functionality of the server, the server role including a printer server;

selecting a role inquiry from a set of role inquiries, the set of role inquiries comprising requests to determine the server role and requests to monitor the server after the server role has been determined, wherein if the server role has been determined as the printer server, the requests to monitor the server include printer ports information and spool directory information;

querying the remote computer with the role inquiry;

receiving a response to the role inquiry from the remote computer; and

attempting to determine a server role of the remote computer from the response.

41. (Original) The computer-readable medium of claim 40, wherein the method further comprises:

selecting a second role inquiry from a set of role inquiries, if the server role of the remote computer cannot be determined;

querying the remote computer with the second role inquiry;

receiving a second response to the second role inquiry from the remote computer; and

determining server role of the remote computer from the second response.

42. (Original) The computer-readable medium of claim 40, wherein the attempt to determine a server role of the remote computer from the response is successful.